ECZ930 eZ.HD Series

720p Analog High Definition

True Day/Night Outdoor IR Bullet Camera

User's Manual

EverFocus®

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Precautions

1. **Do not install the camera near electric or magnetic fields.** Install the camera away from TV/radio transmitters, magnets, electric motors, transformers and audio speakers since the electromagnetic fields generated from these devices may distort the video image or otherwise interfere with camera operation.
2. **Never disassemble the camera beyond the recommendations in this manual nor introduce materials other than those recommended herein.** Improper disassembly or introduction of corrosive materials may result in equipment failure or other damage.
3. **Try to avoid facing the camera toward the sun**. In some circumstances, direct sunlight may cause permanent damage to the sensor and/or internal circuits, as well as creating unbalanced illumination beyond the capability of the camera to compensate.
4. **Keep the power cable away from water and other liquids and never touch the power cord with wet hands.** Touching a wet power cord with your hands or touching the power cord with wet hands may result in electric shock.
5. **Never install the camera in areas exposed to oil, gas or solvents.** Oil, gas or solvents may result in equipment failure, electric shock or, in extreme cases, fire.
6. **Cleaning.** For cameras with interchangeable lenses, do not touch the surface of the sensor directly with the hands. Use lens tissue or a cotton tipped applicator and ethanol to clean the sensor and the camera lens. Use a damp soft cloth to remove any dirt from the camera body. Please do not use complex solvents, corrosive or abrasive agents for cleaning of any part of the camera.
7. **Do not operate the camera beyond the specified temperature, humidity or power source ratings.** This camera is suitable for indoor operation only. Use the camera at temperatures within -10°C~50°C (14°F~122°F) and humidity less than 80%; this device is not rated as submersible. The input power source is 12VDC. Be sure to connect the proper + / - polarity and voltage, as incorrect polarity or too high a voltage will likely cause the camera to fail, and such damage is not covered by the warranty.
8. **Mounting.** Use care in selecting a solid mounting surface which will support the weight of the camera plus any wind, snow, ice or other loading, and securely attach the camera to the mounting surface using screws and anchors which will properly support the camera. If necessary (e.g. when mounting to drop ceilings) use a safety wire to provide additional support for the camera.

Safety Notice

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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ATTENTION! This is a class A product which may cause radio interference in a domestic environment; in this case, the user may be urged to take adequate measures.

RoHS

This Product is RoHS compliant.

WEEE

Your EverFocus product is designed and manufactured with high quality materials and components which can be recycled and reused. This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from your household waste. Please, dispose of this equipment at your local community waste collection/recycling centre. In the European Union there are separate collection systems for used electrical and electronic product.
Please, help us to conserve the environment we live in!

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1. Introduction

Get incredible performance in bright light or low light, and the resolution listed in the specification from the actual camera you install. To take full advantage of the amazing resolution available from this advanced imaging technology, the EverFocus eZ.HD Series ECZ930 uses a fixed lens together with 1/2.8" SONY 1.37M pixels CMOS to deliver 720p high resolution. Combined with a useable native low light sensitivity of 0 lux without using digital slow shutter and **30 LEDs** with range of 15m/50ft. Moreover, this camera truly provides color without compromise: 720p high resolution, Digital Wide Dynamic Range for clear color images in the most challenging of bright or unbalanced scene lighting conditions, plus true day/night IR enhanced images in low light environments with guaranteed ZERO ghosting. The ECZ930 camera equipped with IP66 weather resistant housing has 3-axis rotation design that delivers wall or ceiling mounting flexibility. Astounding image quality from the 3.6mm lens; 12VDC voltage operation and a full suite of OSD Menu and DSP functions controllable at the camera (3DNR to save DVR HDD space, privacy masking, mirroring, and much more) This is the camera that you have been waiting for to create analog CCTV systems that produce astounding image clarity in a wide range of outdoor applications at the widest range of light levels. The ECZ930 supports both NTSC and PAL scanning systems, which can be switched via OSD.

1.1 Packing List

- Camera Body x 1
- User Manual x 1
- Screw x 3
- Hexagon Wrench x1
- Template Plate x1
- Plastic Anchor x 3

1.2 Features

- 720p with high flexibility and performance for astounding image
- 1/2.8" SONY 1.37M pixels CMOS with very low light sensitivity
- 30 IR LEDs for 15m/50ft.range (depending on scene IR reflectivity)
- D-WDR to improve the visibility under high contrast scene
- Provides 3D Noise Reduction ensures less blurry moving subjects, vivid and high SN ratio images even under low light environments
- Support 720p & 960H analog signal output, which can be easily switched by OSD
- Internal wire system with anti-cut bracket
- Weather Resistant IP66 and built-in heater
- Supports Ceiling Mount and Wall mount

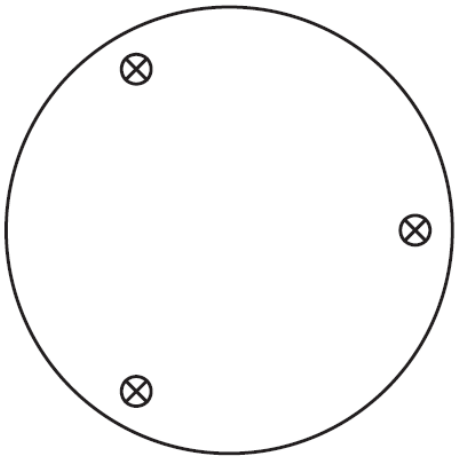
2. Cable Description

No.	Name	Descriptions
1	**Power Cable**	Connects to a 12VDC power source.
2	**Dual Video Output**	720p and 960H output, using a 75 Ohm BNC-type coaxial cable.
3	**DC Power Pigtail Cable**	Optional power pigtail cable. The red wire is positive (+); while the black wire is negative (-).

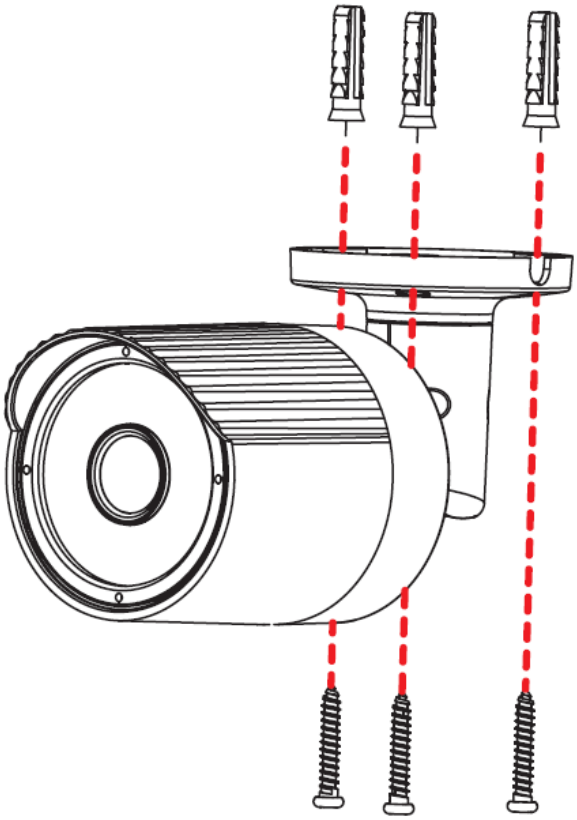
3. Installation

3.1 Installation and Adjustment

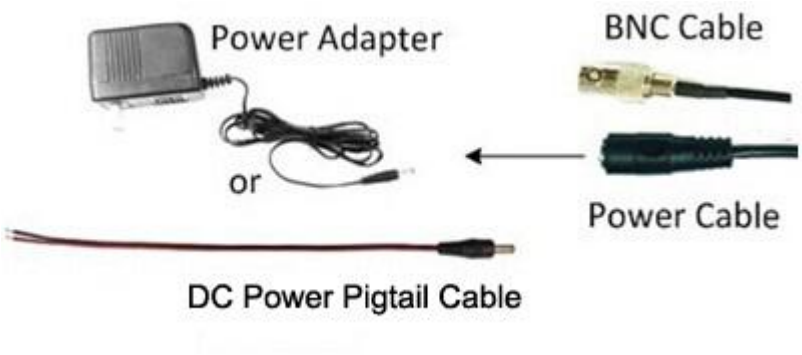
1. For Ceiling Mount / Wall Mount users: Stick the **Template Plate** on the position where you want to attach the camera.



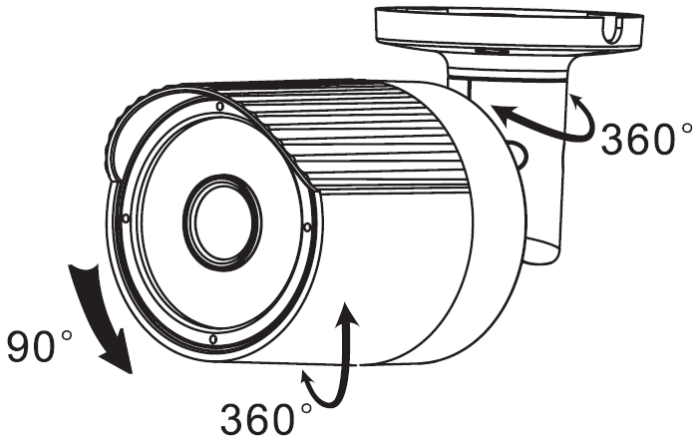
2. Drill three holes and insert the supplied **Plastic Anchors** into the holes, then attach the camera to the ceiling or wall by using the supplied **Screws**.



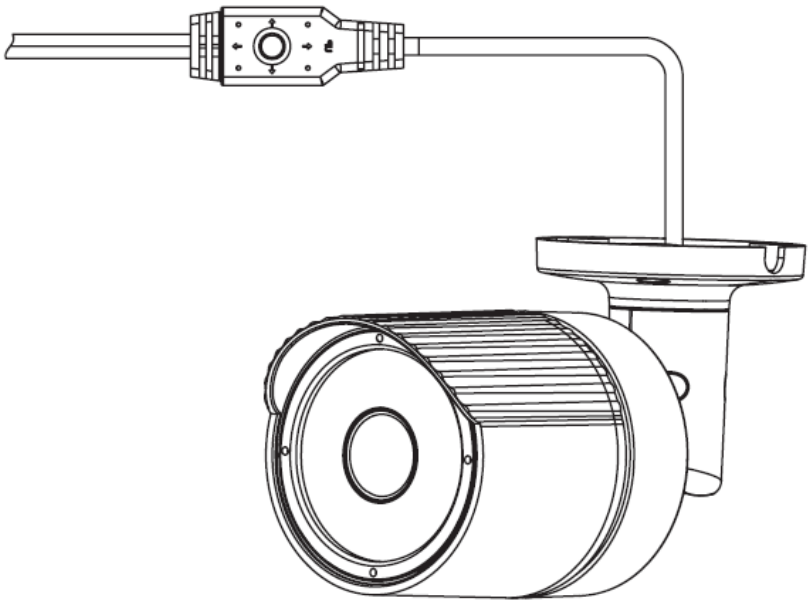
3. Connect the camera to an AHD DVR or a portable monitor with the 12VDC power source using the supplied **DC Power Pigtail Cable** or a power adapter.



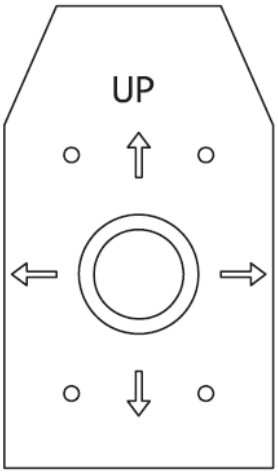
4. Adjust camera angles by tilting or rotating the camera. Then fasten the bracket with the **Hexagon Wrench** (Note: The bracket base can be rotated by 360°, the housing body also can be rotated by 360° and tilted by 90°).



5. Configure camera settings by using the OSD Menu Joystick.



OSD indication as shown in the figure:



- Push the Joystick up / down to select among menu items.
- Push the Joystick left / right to adjust the level of the selected item.
- Press the Joystick to enter the submenu or exit the OSD Setup Menu.

Note: The function button is not only for direction control, also for switching Video format and Video output. Please follow the detailed instruction as below:

- ✧ Push the joystick "down" button key over 5 seconds to switch video format from PAL to NTSC.
- ✧ Push the joystick "left" button key over 5 seconds to switch video output from 720p to 960H (720p is the default).
- ✧ Push the joystick "right" button key over 5s to switch video output from 960H to 720p.

4. Configuration in the OSD Menu

You can use the Joystick on the bottom housing of the camera to configure camera settings in the OSD menu. The OSD menu structure is as below:

No.	Main	Sub Menu	Sub Menu / Function		
1	Lens	Manual*			
2	Exposure	Shutter	NTSC: 1/30, 1/60, FLK, 1/240, 1/480, 1/1000, 1/2000, 1/5000, 1/10000, 1/50000, X2, X4, X6, X8, X10, X15, X20, X25, X30, Auto*		
			PAL: 1/25, 1/50, FLK, 1/200, 1/400, 1/1000, 1/2000, 1/5000, 1/10000, 1/50000, X2, X4, X6, X8, X10, X15, X20, X25, X30, Auto*		
		AGC	0 – 15(15*)		
		Sens-up	Off*		
			Auto	Sens-up	X2, X4*, X6, X8, X10, X15, X20, X25, X30
		Brightness	1-100(40*)		
		D-WDR	Off*		
			On	Level	0-8(8*)
			Auto		
		Defog	Off*		
			Auto	Pos/Size	Position, Size, ↑, ↓, →, ←
				Gradation	0-2(0*)
				Default	
3	Backlight	Off*			
		BLC	Level	Middle*, High, Low	
			Area	Position, Size, ↑, ↓, →, ←	
			Default		
		HSBLC	Select	Area1*, Area2, Area3, Area4	
			Display	Off	
				On*	Position, Size, ↑, ↓, →, ←
			Black Mask	On*/Off	
			Level	0-100(20*)	
			Model	All Day*	
				Night	AGC Level 0-255(48*)
			Default		
4	White Balance	ATW*			
		AWC→SET			

		Indoor				
		Outdoor				
		Manual	Blue	1-500(50*)		
			Red	0-100(50*)		
		AWB				
5	Day & Night	Ext*	D→N(Delay)	0-60(1*)		
			N→D(Delay)	0-60(1*)		
		Auto	D→N(AGC)	1-255(240*)		
			D→N(Delay)	0-60(1*)		
			N→D(AGC)	1-255(50*)		
			N→D(Delay)	0-60(5*)		
		Color				
		B/W	Burst	Off*/On		
			IR Smart	Off		
				On*	Level	0-15(4*)
					Area	Position, Size, ↑ , ↓ , →, ←
			IR PWM	Off		
				0-100(100*)		
6	NR	2DNR	Middle*/Low/Off/High			
		3DNR	Middle*/Low/Off/High			
7	Special	Cam Title	Off*			
			On	0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ▶→ ← ↑ ↓ () ¯ -_■ /=&:~,.		
		D-effect	Freeze	Off*/On		
			Mirror	Off*, Mirror, V-flip, Rotate		
			Neg. Image	Off*/On		
		Motion	Off*			
			On	Select	Area1*,Area2,Area3,Area4	
				Display	On*	Position, Size, ↑ , ↓ , →, ←
					Off	
				Sensitivity	0-100(64*)	
				Color	Green*, Blue, White, Red	
				Trans	1.00*,0.75,0.50, 0.25	
				Alarm	View Type	Off, Block, Outline, All*
					OSD View	On*/Off
					Alarm Out	On*/Off
					Alarm Sig	High*, Low

					Time	1-15(3*)
				Default		
		Privacy	Off			
			On	Select	Area1*,Area2,Area3,Area4	
				Display	Off	
					Color*	Position, Size, ↑ , ↓ , →, ←
					Mosaic	Position, Size, ↑ , ↓ , →, ←
					Inv	Position, Size, ↑ , ↓ , →, ←
				Color	White*, Black, Red, Blue, CYAN, Yellow, Green	
				Trans	1.00*,0.75,0.50, 0.25	
				Default		
		Language	ENG*/CHN1/CHN2/GER/FRA/ITA/SPA/POL/RUS/POR/NED/TUR			
		Defect	Live DPC	Off		
				On*	AGC level	0-255(65*)
					Level	0-100(100*)
			White DPC	Off		
				On*	Pos/Size	Position, Size, ↑ , ↓ , →, ←
					Start	Close the iris then press
					DPC View	Off*/On
					Level	0-60(5*)
					AGC	0-14(14*)
					Sens-up	x2*, x4, x6, x8,x10, x15, x20, x25, x30
			Black DPC	Off*		
				On	Pos/Siz	Position, Size, ↑ , ↓ , →, ←
					Start	Press Enter
					DPC View	Off*/On
					Level	0-255(255*)
		RS485	CAM ID	0-255(1*)		
			ID Display	Off*/On		
			Baud Rate	2400,4800,9600,19200 ,38400		

8	Adjust	Sharpness	Off		
			Auto*	Level	0-10(6*)
				Start AGC	0-255(50*)
				End AGC	0-255(200*)
		CRT/LCD	CRT	Black Level	0-60(0*)
				Blue Gain	0-100(50*)
				Red Gain	0-255(50*)
			LCD*	Gamma	User*,0.45,0.50,0.55,0.60,0.65,0.70,0.75,0.80,0.85,0.90, 0.95,1.00
				Blue Gain	0-100(50*)
				Red Gain	0-100(50*)
		LSC	Off*/On		
		Video. Out	PAL/NTSC		
9	Exit		Save& END /Reset/Not Saved		

5. Specifications

P/N	ECZ930
Pickup Device	1/2.8" SONY 1.37M pixels CMOS
Video Format	NTSC and PAL(can be switched via OSD)
Effective Pixels	1280 (H)*720 (V)
Scanning System	Progressive Scan
Sensitivity	0 lux with IR on
S/N Ratio	Over 48 dB (AGC OFF)
Electronic Shutter	AUTO, Manual (X30~1/ 50000), FLK
Video Output	BNC 1.0Vp-p 75Ω
Gamma Correction	0.45
Lens Type	3.6mm fixed lens with ICR
BLC	OFF/BLC/HS BLC Selectable
AGC	0~15 Levels
White Balance	ATW/AWC-SET/INDOOR/OUTDOOR/MANUAL/AWB
Sync Mode	Internal
Day/Night	Ext, Auto, Color, B/W
IR LED	30 Units
IR Distance	Up to 15m/50ft. (depending on scene IR reflectivity)
OSD Languages	12-Language
DNR	2DNR/3DNR, Off
DEFOG	Off/Auto(under B/W mode)
D-WDR	On/Off
Sens-up	Off/On(x30~x2)
Mirror	Off, Mirror, V-flip, Rotate
Motion Detection	On/Off for 4 selectable zones
Privacy Mask	On/Off for 4 selectable zones
Environmental	IP66 Weather Resistant
Power Source	12VDC
Power Source	3.6w max.
Operating Temperature	-10°C~50°C / 14°F~122°F
Humidity	Less than 80%
Dimensions	166.7 x 66 x 66mm / 6.56” x 2.60” x 2.60”
Weight	400g/0.88lbs
Certifications	CE/FCC/ RoHS

Specifications and designs are subject to change for improving the functionality of this product without notice.

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This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed ofseparately from your household waste.
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In the European Union there are separate collection systems for used electrical and electronic product.
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Ihr EverFocus Produkt wurde entwickelt und hergestellt mit qualitativ hochwertigen Materialien und Komponenten, die recycelt und wieder verwendet werden können.
Dieses Symbol bedeutet, dass elektrische und elektronische Geräte am Ende ihrer Nutzungsdauer vom Hausmüll getrennt entsorgt werden sollen.
Bitte entsorgen Sie dieses Gerät bei Ihrer örtlichen kommunalen Sammelstelle oder im Recycling Centre.
Helfen Sie uns bitte, die Umwelt zu erhalten, in der wir leben!